

EXHIBIT B

TRAUMA SURGERY

INITIAL ASSESSMENT AND AIRWAY MANAGEMENT

The Advanced Trauma Life-Support System (ATLS), developed by the American College of Surgeons' Committee on Trauma, represents the best current approach to the severely injured patient. The sequence of management includes: 1) primary survey and initial resuscitation, 2) evaluation with continuation of resuscitation, and 3) secondary survey with definitive management.

The primary survey attempts to identify and treat immediate life-threatening conditions. This is accomplished by following the ABCs: **airway control**, with cervical spine precautions; **assisted breathing** or mechanical ventilation; and support of the **circulation** via volume resuscitation and tamponade of external bleeding. Once alveolar ventilation is ensured, the next priority is to optimize O₂ delivery by maximizing cardiovascular performance. Hypovolemia is the most likely etiology of postinjury shock; therefore, fluid resuscitation should be initiated via two large-bore iv cannulas placed in the antecubital veins. Any external source of bleeding should be controlled with manual compression. When vascular collapse precludes peripheral percutaneous access, saphenous vein cutdown at the ankle is preferred. ECG monitoring, serial vital signs, rapid physical examination, rectal temperature reading and initiation of flow sheet complete the primary survey. Response of the patient to fluid resuscitation is then evaluated and, if crystalloid volume exceeds 50 ml/kg, type-specific or O(-) blood should be given. If shock persists despite fluid resuscitation, cardiogenic shock, tension pneumothorax or ongoing hemorrhage should be considered. Cardiogenic shock may require ER thoracotomy; tension pneumothorax should be vented immediately with chest tube placement. Ongoing hemorrhage should be treated surgically, without an attempt to normalize vital signs with fluid administration.

MANAGEMENT OF AIRWAY

Airway obstruction, inadequate ventilation, hypoxemia, abnormal mental status and cardiovascular instability are the usual indications for airway intervention. The three commonly accepted methods of airway control are: **blind nasotracheal intubation**, **orotracheal intubation** and **cricothyroidotomy**.

Nasotracheal intubation, recommended for spontaneously breathing trauma pa-

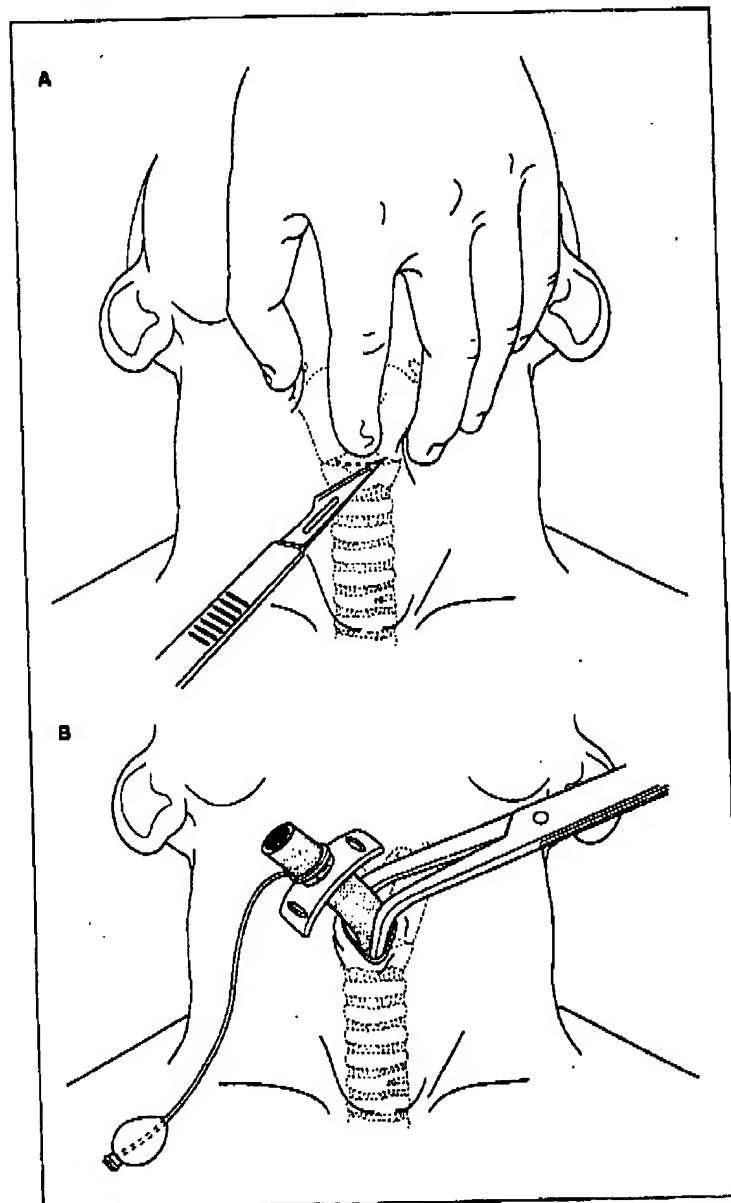


Figure 7.13-1. Cricothyroidotomy. (A) Identification of the cricothyroid membrane by palpation and incising the membrane transversely. (B) Insertion of a tracheostomy tube through the cricothyroid membrane, which is spread with a tracheal dilator. (Reproduced with permission from Greenfield LJ, et al, eds: *Surgery: Scientific Principles and Practice*, 2nd edition. Lippincott-Raven, Philadelphia: 1997, 1479.)